A method of treating multiple sclerosis, the method comprises administering to a subject in need thereof a therapeutically effective amount of a compound, the compound having: (a) a combination of molecular weight and membrane miscibility properties for permitting the compound to cross the blood brain barrier of the organism; (b) a readily oxidizable chemical group for exerting antioxidation properties; and (c) a chemical make-up for permitting the compound or its intracellular derivative to accumulate within the cytoplasm of cells.